

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VI (NEW) EXAMINATION – WINTER 2021****Subject Code:3160712****Date:26/11/2021****Subject Name:Microprocessor and Interfacing****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Explain system bus of 8085 microprocessor.	03
	(b) Explain following pins of an 8085 microprocessor in brief: 1. ALE 2. TRAP 3. READY 4. HLDA	04
	(c) Explain 8085 Programming Model and Flag Register.	07
Q.2	(a) Differentiate 8085 microprocessor with 8086 microprocessor.	03
	(b) Draw the timing diagram of MOV M, D instruction of an 8085 microprocessor.	04
	(c) Write an 8085 assembly language program to arrange the following numbers in ascending order: 29H, 47H, 06H, 03H, 17H.	07
	OR	
	(c) Write an 8085 assembly language program to arrange the following numbers in descending order: 29H, 47H, 06H, 03H, 17H.	07
Q.3	(a) Explain subroutine with suitable example.	03
	(b) Explain following instructions with no. of bytes, machine cycles and T-states required for execution: 1. SHLD 2. RAL	04
	(c) Ten 8-bit values are stored from memory location 5000H onwards. Write an 8085 assembly language program to add POSITIVE values on addresses starts from 5100H and NEGATIVE values on addresses starts from 5200H.	07
	OR	
Q.3	(a) What is interrupt? List hardware interrupts of 8085.	03
	(b) Explain following instructions with no. of bytes, machine cycles and T-states required for execution: 1. CALL 2. CPI	04
	(c) Ten 8-bit values are stored from memory location 3000H onwards. Write an 8085 assembly language program to find the largest value and stored it on the location 4000H.	07
Q.4	(a) What will be the value in accumulator, for the given 8085 program below? MVIC,7FH MVI B, 3EH MOV A, B RLC RLC ANI 7FH HLT	03
	(b) Consider the following 8085 assembly language instructions: LXI D, 1234H	04

NEXT: DCX D
MOV A, E
ORA D
JNZ NEXT

- What amount of delay is generated if the crystal frequency is 4 MHz?
- (c) Explain various addressing modes of 8085 microprocessor. **07**
- OR**
- Q.4 (a)** What will be the value in accumulator, for the given 8085 program below? **03**
- MVI A, 07H
RLC
MOV B,A
RLC
RLC
RLC
ORA B
HLT
- (b) Write an 8085 assembly language program to convert a two-digit BCD number into its equivalent hexadecimal number. **04**
- (c) Define the followings: Machine Cycle, T-state, JC, CMP, RET, SBB, STC **07**
- Q.5 (a)** Explain format of the descriptor in 80386 with diagram. **03**
- (b) Draw block diagram of 80286 microprocessor. **04**
- (c) Draw and explain the block diagram of the programmable peripheral interface 8255A. **07**
- OR**
- Q.5 (a)** List and explain the segment registers of 8086 microprocessor. **03**
- (b) Draw block diagram of 80386 microprocessor. **04**
- (c) Draw and explain the block diagram of the programmable interrupt controller 8259A. **07**
